IN THE CLAIMS:

Please amend the claims as follows:

1-10. (Canceled)

11. (Currently Amended) A method of producing fibroblasts for culturing embryoid bodies from embryonic stem cells, comprising:

obtaining embryonic stem cells;

culturing the embryonic stem cells to induce formation of embryoid bodies; isolating the embryoid bodies;

casting the embryoid bodies in a three-dimensional scaffolding material and a cell culture medium, wherein the three-dimensional scaffolding material is a gel; and

growing the embryoid bodies <u>embedded</u> in the three-dimensional scaffolding material and <u>in the cell culture medium</u>; and <u>thereby</u> inducing differentiation of the embryoid bodies to produce <u>substantially homogenous populations of fibroblasts after the growing step</u>.

- 12. (Currently Amended) The method of claim 11, wherein the inducing step comprises adding a cytokine to the three-dimensional embryoid body culture.
- 13. (Original) The method of claim 12, wherein the cytokine is vascular endothelial growth factor (VEGF); vascular permeability factor (VPF); members of the fibroblast growth factor family (FGF); members of the interleukin family (IL-1 α , and -1 β , -2, -3, -4, -5, -6, -7, -8, -9,-10,-11,-12,-13,-14,-15,-16,-17 or -18); epidermal growth factor (EGF); platelet-derived growth factor (PDGF); platelet-derived endothelial cell growth factor (PD-ECGF); transforming growth factors alpha and beta (TGF- α , TGF- β); tumor necrosis factor alpha (TNF α); hepatocyte growth factor (HGF); granulocyte-macrophage colony stimulating factor (GMCSF); insulin growth factor-1 (IGF-1); angiogenin; angiotropin; fibrin, nicotinamide; macrophage inflammatory protein (MIP); macrophage migration inhibiting factor (MIF); granulocyte stimulating factor (GCSF); macrophage stimulating factor (MCSF); endothelial cell growth factor (ECGF); members

of the interferon family (IFNs); members of the insulin-like growth factor family (IGF-I and IGF-II); nerve growth factor (NGF); members of the neurotrophin family (NTs); members of the selectin family; intercellular adhesion molecule (ICAM); platelet vascular cell adhesion molecule (PECAM); vascular cell adhesion moleculre (VCAM); calcitonin, mediators, hormones or hirudin.

- 14. (Original) The method of claim 13, wherein the cytokine is transforming growth factor beta (TGF-β); fibroblast growth factor (FGF); or interleukin 4 (IL-4).
- 15. (Currently Amended) The method of claim 12, wherein the inducing step further comprises adding a cell culture medium comprising about 2% ES qualified fetal bovine serum.
- 16. (Currently Amended) The method of claim 11, further comprising: the steps of;

 -isolating extracting the fibroblasts differentiated cells from the three-dimensional scaffolding material; and

[[-]]culturing the <u>fibroblasts</u> differentiated cells in monolayer culture; after the inducing step.

- 17. (Currently Amended) The method of claim 16, wherein the isolating step extracting is performed by digesting the three-dimensional scaffolding material and by centrifugation.
- 18. (Currently Amended) The method of claim 16, wherein the monolayer culture includes a culture medium of knock out DMEM and about 10% ES qualified fetal bovine serum.
- 19. (Currently Amended) The method of claim 12, wherein the inducing step includes adding FGF, TGF-b1 or IL-4 to the medium.